**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) A diagnostic method for detecting and identifying bacterial species causing infections from a clinical sample, ~~characterized by~~ said method comprising:

a) amplifying DNA isolated from said clinical sample using a mixture of DNA primers that comprises sequences which hybridize with the sequences that originate from conserved regions of *rpoB* genes encoding DNA directed RNA polymerase [EC:2.7.7.6] subunit B of bacterial species causing infections, said sequences comprising ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 20 and 21 and/or complementary sequences thereof and/or functional fragments thereof,

b) contacting the amplified DNA with a desired combination of oligonucleotide probe sequences that hybridize under normal hybridization conditions with hyper-variable regions situated near said conserved regions of *rpoB* genes encoding DNA directed RNA polymerase [EC:2.7.7.6] subunit B of bacterial species causing said infections, said sequences being bacterial species specific under said hybridization conditions, and

c) detecting the formation of a possible hybridization complex.

2. (Currently Amended) The diagnostic method according to claim 1, ~~characterized in that~~ wherein said infections causing bacterial species are bacterial species that

cause human disease, particularly respiratory tract infections and/or ear, nose and throat diseases.

3. (Currently Amended) The diagnostic method according to claim 1 ~~or 2~~, ~~characterized in that~~ wherein said hyper-variable region is the hyper-variable region of the gene encoding the *rpoB* protein of a bacterial species selected from *Haemophilus influenzae, Streptococcus pneumoniae, Streptococcus pyogenes, Pseudomonas aeruginosa, Staphylococcus aureus, Legionella pneumophila, Corynebacterium diphteriae, Mycoplasma pneumoniae, Escherichia coli, Moraxella catarrhalis and Neisseria gonorrhoeae*.

4. (Currently Amended) The diagnostic method according to ~~any one of claims 1-3, characterized in that~~ claim 1, wherein the length of oligonucleotide probe sequences used in step b) 15 – 30, more preferably 19 -30, and most preferably 19 – 26 nucleic acids and are optionally labeled.

5. (Currently Amended) The diagnostic method according to ~~any one of claims 1 to 4, characterized in that~~ claim 1, wherein said combination of oligonucleotide probe sequences comprises all or a portion of ~~the sequence identified by SEQ. ID. NR:~~ SEQ ID NOS: 1 to 19, and/or ~~reverse and/or~~ complementary sequences thereof, or functional fragments thereof and preferably it comprises all ~~the sequences identified by SEQ. ID NR:~~ of the SEQ ID NOS: 1 to 19.

6. (Currently Amended) The diagnostic method according to claim 5, ~~characterized in that~~ wherein said combination of oligonucleotide probe sequences is attached onto a solid support, preferably onto treated glass.

7. (Currently Amended) The diagnostic method according to claim 1, ~~characterized in that~~ wherein the DNA isolated from the clinical sample in step a) is amplified using the polymerase chain reaction (PCR) and ~~that~~ wherein the DNA amplified in step b) is contacted with the bacterial species-specific oligonucleotide probes attached onto a solid support.

8. (Currently Amended) The diagnostic method according to claim 7, ~~characterized in that~~ wherein suitably labeled nucleotides are used in the amplification of DNA isolated from a clinical sample in step a) to generate a detectable target strand and ~~that~~ wherein the amplified and optionally labeled target DNA in step b) is contacted with a solid support, on which all bacterial species-specific oligonucleotide probes ~~identified by SEQ. ID. NR:~~ of SEQ ID NOS: 1 to 19 and/or ~~reverse and/or~~ complementary sequences thereof have been attached.

9. (Currently Amended) The diagnostic method according to claim 8, ~~characterized in that~~ wherein the amplified and optionally labeled target DNA in step b) is contacted with a solid support, preferably treated glass, on which specific oligonucleotide probe sequences detecting one specified bacterial species or a few specified bacterial species causing infections have been attached, said sequences being selected from sequences shown in Table 3 and/or complementary sequences

thereof.

10. (Currently Amended) The diagnostic method according to ~~any one of claims 1 to 9, characterized in that~~ claim 1, wherein the microarray technology is used in step c).

11. (Currently Amended) A DNA primer mixture ~~characterized by~~ comprising sequences that hybridize with sequences of the conserved regions of *rpoB* genes encoding DNA directed RNA polymerase [EC:2.7.7.6] subunit B of bacterial species that cause infections, said mixture comprising ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 20 and 21 and/or complementary sequences thereof or functional fragments thereof.

12. (Currently Amended) An oligonucleotide sequence useful in the diagnosis of infection causing bacterial species, ~~characterized in that it~~ wherein said oligonucleotide sequence hybridizes under normal hybridization conditions with a sequence of a hyper-variable region that is bacterial species-specific and is situated near the conserved regions of *rpoB* genes encoding DNA directed RNA polymerase [EC:2.7.7.6] subunit B of bacterial species causing said infections, said oligonucleotide sequence being bacterial species-specific and said oligonucleotide sequence comprising one of the ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 1 to 19 ~~and/or reverse~~ or complementary sequences thereof or functional fragments thereof.

13. (Currently Amended) The combination of oligonucleotide probe sequences useful in the diagnosis of infection causing bacterial species ~~characterized by~~ comprising any combination of the ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 1 to 19 ~~and/or reverse~~ or complementary sequences thereof or functional fragments thereof.

14. (Currently Amended) The combination of oligonucleotide probes according to claim 13 ~~characterized by~~ comprising all of the ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 1 to 19.

15. (Currently Amended) The use of the combination of oligonucleotide probes according to claim ~~13 or~~ 14 for the detection, identification, or classification of disease causing bacterial species.

16. (Currently Amended) A diagnostic kit for use in the diagnosis of infection-causing bacteria, especially those causing respiratory tract infections, ~~characterized by~~ comprising

a) a DNA primer mixture comprising sequences that hybridize with sequences of the conserved regions of *rpoB* genes encoding DNA directed RNA polymerase [EC:2.7.7.6] subunit B of bacterial species causing infections, especially bacterial species that cause respiratory tract infections, said mixture comprising ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 20 and 21 ~~and/or reverse~~ or complementary sequences thereof or functional fragments thereof,

b) a combination of bacterial species-specific oligonucleotide probe

sequences, optionally attached on a solid support, comprising any combination of the ~~sequences identified by SEQ. ID. NR:~~ SEQ ID NOS: 1 to 19 ~~and/or reverse~~ or complementary sequences thereof or functional fragments thereof,

c) positive and optionally negative control probe sequences, and optionally

d) reagents required in the amplification, hybridization, purification, washing, and/or detection steps.